CASEBOOK

ON USE OF INTERVENTION EVIDENCE IN HEALTH PROMOTION AND CHRONIC DISEASE PREVENTION

PROTECTING CANADIANS FROM ILLNESS

Public Health Agency of Canada
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Planning for and preparation of this Casebook was guided by experiences shared by a Project Reference Group (PRG) with representation from the Public Health Agency of Canada's Ottawa and Regional Offices, the Canadian Institutes of Health Research's Institute of Population and Public Health and its Knowledge Translation and Public Outreach Portfolio, and the National Collaborating Centre on Methods and Tools. The support and expert advice of the PRG is gratefully acknowledged.

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FOREWORD

'Evidence-informed' practice in health promotion and chronic disease prevention is easy to say; hard to do. We know why it is important as we endeavour to use limited public health resources to do what has been shown to work and not to repeat what has been shown *not* to work. The challenges, however, can be formidable. The evidence base on what works, why and how is limited and in many cases hard to find because it is located in a broad range of different research literature. The quality of the evidence may be lacking and often, as one of the authors in this casebook states, "...suggestive, speculative, and informed by experience rather than by randomized controlled trials or other strong evaluation designs".

Resources to undertake robust evaluation and intervention research are often limited. In the context of public health, where programs and policies are undertaken in real world, dynamic environments, there are a myriad of factors that can impact the implementation and results of a program or policy and the timeframes for individual and environmental change are often long term. What may have been shown to work in one setting may not necessarily work in another because of unique contextual factors.

Despite these challenges, more than ever, there is consensus that the use of evidence to improve policies, practice and programs in health promotion and chronic disease prevention is critical. The complexity of acquiring and applying intervention evidence in this evolving area requires us to heed lessons from the experiences of organizations who have 'taken the plunge'.

This casebook offers stories of how a range of public health organizations are taking on this challenge. The cases reflect large and small organizations, varied geographical settings and organizational types. Both their successes and challenges in planning and implementing evidence-informed initiatives are described. What is remarkable is how they have all brought to bear multiple forms of evidence, paid attention to the importance of engaging community and other partners, and their commitment to finding ways to creatively and continually learn.

Our hope is that these case stories and experiences will offer fresh ideas and inspiration, as well as renewed interest in finding ways to use evidence in the various contexts within which we work. We look forward to continuing the conversation and the evolution of evidence-informed practice in Canada.

Kerry Robinson
A/Director, Intervention and Best Practices Division,
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INTRODUCTION

To be effective, health promotion and chronic disease prevention policies, programs, practices and technologies need to keep pace both with population needs and with new emerging and established evidence. This demands a non-linear and iterative process of continual evaluation and assessment of interventions as well as searching, appraising and reviewing of gray and published evidence in effective interventions and approaches to ensure currency, effectiveness and relevance. This Casebook presents some of the successes that proponents have had with the use of evidence in the planning, development, implementation and evaluation of health promotion and chronic disease prevention interventions.

The cases submitted interpret and illustrate the use of "intervention evidence" — whether data, research, evaluation or expert evidence — in many different ways:

- to identify or define a need,
- to identify a potential intervention and intervention approach (what to do and how to do it), and
- to assess the performance or success of the intervention.

The Casebook objectives are to

- Increase awareness and understanding of the **value of acquiring and applying evidence**;
- Highlight **different strategies and approaches for the acquisition and application of evidence** to practice, program and policy decision-making in health promotion/chronic disease prevention;
- Demonstrate the **impact of using evidence** on health promotion and chronic disease prevention policy, program and practice changes;
- Identify **lessons learned** through the experiences showcased in the casebook; and
- **Facilitate ongoing knowledge exchange** by connecting audiences to the work of others and to each other.

A comprehensive use of evidence entails the application of evidence over the lifespan of an intervention from planning, through implementation to evaluation and refinement or continuous improvement. The diagram below represents the cyclical nature of evidence use and highlights the variety of ways in which evidence can be used.

Surveillance and monitoring data/literature review, needs assessment, evaluation evidence
1
Identify a problem, gap in practice, or demonstate need for interventions
Review of published intervention evidence, evaluation evidence, contextual evidence
EVIDENCE USE CYCLE
Identify appropriate interventions to address the problems (program, practice or policy)
2
3
Determine continuation or modifications of intervention
Evaluation evidence, performance evidence, lessons learned, surveillance and monitoring data

Looking at the lifespan of an intervention, evidence may be used at the outset to support the need for an intervention, to identify a problem or to demonstrate a gap in current practice. A variety of types of evidence may be used at this stage including current best practice evidence, program evaluation evidence, and surveillance and monitoring data.

Evidence may then be used to support the selection of the appropriate intervention policy, program, practice or technology. Again, a variety of sources and types of evidence may be used. Case 1 (Effective Interventions to Prevent Alcohol-Exposed Pregnancies: A Rapid Review of the Literature) demonstrates how a review of the literature led Peel Public Health to modify their intervention. In addition to this, a review of the evidence was used to inform the development of the new intervention. Case 5 (Cook It Up! Community-Based Cooking Program for At Risk Youth) demonstrates the need to be knowledge creators in the absence of available evidence.

Finally, evidence may be used to evaluate and assess the selected intervention policy, practice, program or technology. Organizations may use program evaluation data, focus group data, and surveillance and monitoring data to evaluate and assess the success of the intervention. Once this has taken place, the evidence gathered may be used to identify needed improvements to the intervention as originally developed and deployed, to identify the need for a new intervention, or to identify a new problem that exists in the program or practice of interest.

The cases presented here illustrate the use of evidence at all three stages in the evidence feedback loop. Depending on the phase of the project featured, an organization may not have completed the evaluation process, but a commitment has been made and/or preparations and infrastructure have been created to conduct the evaluation in the future.

CASE 1: Effective Interventions to Prevent Alcohol-Exposed Pregnancies: A Rapid Review of the Literature

Given that there is no *known* safe level of alcohol consumption in pregnancy, Peel Public Health encourages pregnant women to abstain from alcohol during their pregnancy. Specifically, the Family Health Division in Peel Public Health has been promoting alcohol abstinence prior to and during pregnancy through a continuum of health promotion strategies, including social marketing campaigns and health education to pregnant clients and their families for many years. The impact of these strategies on changing behaviour had not been evaluated at Peel Public Health and their effectiveness was largely unknown.

A rapid review was commissioned to identify research evidence on effective public health strategies to prevent and/or reduce alcohol consumption among pregnant women and women planning pregnancy and to translate the evidence into appropriate program and policy decisions.

CASE 2: Local Public Health Practices to Reduce Social Inequities in Health

Public health utilizes a population health approach to improve the health of the entire population and to reduce health inequities among population groups. Health inequities (a.k.a. social inequities in health) are differences in health status that are systematic, socially produced, and unfair and unjust. There are many actions that should be taken at the national and provincial levels to address inequities. Actions to be taken at the local level are less clear and evidence was not readily available.

The team at the Sudbury & District Health Unit wanted to contribute to the knowledge base for local public health action on social inequities by identifying practices that would be relevant for front line public health practice settings. They have identified *10 promising practices*, because they are found to be "promising" in their potential to "level-up" and reduce health inequities.

CASE 3: Rural HealtheSteps: Exercise Rx

Available scientific evidence clearly indicates that chronic disease continues to be a growing epidemic in Canada. Evidence demonstrates that no other intervention is as effective as exercise for physical and mental health. Yet, new data from the Canadian Health Measures Survey (CHMS) indicate that only 15% of Canadian adults attain the recommended 150 minutes of moderate to intense exercise per week. Importantly, there are alarming discrepancies in the burden of chronic disease based on geography, whereby rural residence increases the risk of developing chronic disease, including Type 2 diabetes, and worsens the outcome.

The "HealtheSteps program" was created in response to this. It builds on an open access web-portal format (HealtheSteps.ca) where an online trained care coach provides patients and providers with real-time access and support for prescriptive exercise. The HealtheSteps program is innovative in nature as it brings research from the lab into community settings such as Family Health Teams (FHT) and community health centres in a practical way. The program goes beyond traditional health education and self-care principles. It provides each person with an individualized lifestyle prescription (based on the results of their Step Test™). It is also sustainable over the long-term so that participants are engaged for much longer than the traditional 6-12 week program. This structure supports long-term lifestyle change in the interwoven areas of exercise, diet and mental health strategies.

CASE 4: Cancer Screening Awareness in PEI

In 2006, PEI had the fifth highest median age (40.8 years) of any jurisdiction in Canada, slightly lower than the other three Atlantic Provinces and Quebec. The increasing number of aging residents along with a lack of participation in screening programs by the latter showed a strong correlation with an increasing incidence rate for cervical cancer among PEI women, and higher mortality rates in general for cervical, breast and colorectal cancer. It was estimated in 2009 that 100 island women would be diagnosed with cancer and that 30 would die of the disease. In addition to facing high breast cancer rates, PEI also showed high rates of cervical cancer compared to the national average (despite access to Pap testing since the 1960s). Canadian Cancer Society statistics also showed that colorectal cancer is the third most common cancer diagnosed in both men and women in Canada, and in PEI, it is the second leading cause of death in men and women combined.

Given the increasing cancer incidence in PEI, the CCS PEI launched a campaign aimed at increasing awareness of cancer screening programs among the target population through community engagement, health professional engagement, and a public awareness campaign. The intent of the public education strategy was to increase screening awareness, knowledge and participation.

CASE 5: Cook It Up! Community-Based Cooking Program for At Risk Youth

Cook It Up! is a joint project of the Middlesex-London Health Unit and the London Community Resource Centre in collaboration with local chefs, farmers, and other community partners. Cook It Up! is an education, skill building health promotion program for groups of at-risk youth (aged 13–18) focusing on nutrition, food safety, food preparation and cooking skills, and agriculture fieldtrips to a variety of local farms. Historically, this age group has been overlooked for effective, skills-based programming offered in the community setting. As youth are transitioning from home, group homes, or foster care to independent living, they have a need for food purchasing, preparation and cooking skills. Given the paucity of evidence related to food skills for youth, especially at-risk you, the project team felt it was important to contribute to the limited body of knowledge by undertaking this formative evaluation study.

HOW TO USE THE CASEBOOK

The cases presented here illustrate a range of applications of evidence, with variations in the **location of the intervention** (rural, urban, etc.), the **scale of the intervention** (local, regional, provincial, etc.), the **organization leading the intervention** (small, large, regional, multi-sectorial, etc.), and **who the initiative is led by** (government, non-government organization etc.).

The icons presented in the legend below and subsequently at the outset of each case are designed to assist readers in their review of the cases. A section on resources and tools, and a glossary of commonly used terms are presented at the end of the casebook.

GEOGRAPHIC SETTING

- RURAL — Rural/Remote
- MIXED — Mixed Urban/Rural
- URBAN — Urban

INITIATIVE LEAD

- GOV'T — Government
- HA — Health Authority
- NGO — Non-Government Organization
- OTHER — Other

ORGANIZATION SIZE

- >500 — Large organization (>500 staff)
- <100 — Small organization (<100 staff)
- <500 — Medium organization (<500 staff)

INITIATIVE SCALE

- LOCAL — Local
- NAT — Pan-Canadian/National
- REG — Regional
- O — Other
- PROV — Provincial

1. EFFECTIVE INTERVENTIONS TO PREVENT ALCOHOL-EXPOSED PREGNANCIES: A RAPID REVIEW OF THE LITERATURE[1]

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Case Features

MIXED OTHER >500 REG

1.1 Introduction and Overview of the Issue

Alcohol is a known teratogen. Drinking alcohol during pregnancy increases a woman's risk of having a baby with birth defects and developmental disabilities. Alcohol consumption during pregnancy is recognized as the cause of fetal alcohol spectrum disorders (FASD), an umbrella term that describes the full range of disabilities associated with prenatal exposure to alcohol. At this time, it is unclear what, if any, amount of alcohol is safe in pregnancy and there is no consensus on a threshold below which alcohol is non-teratogenic.

Peel Public Health works in partnership with "Success-by-6 Peel" and is represented on the Peel FASD Steering Committee along with representation from the medical community, two very large school boards, community service providers and clinicians. All were concerned that children suffering the effects of prenatal alcohol exposure are not meeting their age-appropriate developmental-milestones and reaching their full potential. Evidence was needed to help inform policy and programmatic direction for Peel FASD Steering Committee in order to efficiently use scarce resources to increase awareness level and influence the behaviour of pregnant clients and their families as it relates to prenatal alcohol use. The long-term vision of the committee is to create a sustainable, comprehensive health promotion model on FASD that is comprised of prevention, diagnosis, early intervention and treatment components. In 2010, a strategic plan was developed by community stakeholders that identified evidence-informed strategies to support the actualization of the long-term vision.

Given that there is no *known* safe level of alcohol consumption in pregnancy, the Family Health Division in Peel Public Health had been promoting abstinence of alcohol in the preconception and prenatal periods through social marketing and education campaigns. However, the impact of these strategies in changing behaviour had not been evaluated and their effectiveness was unknown. Consistent with the objective of being evidence-informed, the project team undertook to identify research evidence on effective public health strategies to prevent and/or reduce alcohol consumption among pregnant women and women planning pregnancy and to translate the evidence into appropriate program and policy decisions.

[1] More information on this case, contact Marilyn Kusi-Achampong BSc, MPH, Research and Policy Analyst, Peel Public Health.

1.2 The Role of Evidence

Peel Public Health has a departmental strategy for evidence-informed decision making, used to systematically bring research evidence to practice questions. Based on a Seven Step Framework, the process uses the most recent, highest quality, and highly synthesized research available. Where available, practice guidelines and systematic reviews are used on FASD because they have synthesized the body of primary studies. Each guideline or review is critically appraised, and the evidence is summarized for a panel of service providers for their review and use. A special tool is used to assess the applicability and transferability of the research to the local context, and the evidence is then summarized in a 1:2:20 report.

The **Seven Step Framework** was developed internally at Peel Public Health by our Associate Medical Officer of Health as part of an EXTRA fellowship project that looked at creating a process to use evidence in decision making. The process is informed by literature on rapid review methodology, work from the National Collaborating Centre for Methods and Tools as well as evidence review process used at health-evidence.ca

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The **1:2:20 report** is adapted from the Canadian Health Services Research Foundation (CHSRF) reader-friendly writing-1:3:25 document: http://www.cfhi-fcass.ca/SearchResultsNews/10-06-01/d497a465-5398-4ec8-addf-d7cbf86b1e43.aspx.
It is completed in the following order:

- The full report describing the literature findings (up to 20 pages)
- The executive summary (1–2 pages double spaced)
- Four to six key messages (1 page)

The sections of the report are: Issue, Context, Conceptual Framework, Literature Review Question, Literature Search, Relevance Assessment-inclusion and exclusion criteria, Results of the search, Critical Appraisal, Description of Included Studies, Synthesis of Findings, Draft Recommendations, Applicability and Transferability, Decisions.

Following systematic searches and analyses of academic and grey literature databases, a Rapid Review Report was written and a knowledge translation (KT) strategy developed. The Rapid Review has been made available for all Public Health staff to access through our website hosting all our literature reviews. The KT strategy included the development of a one-page summary document entitled 'Evidence in Practice'. The document gives a synopsis of the report for decision makers and practitioners. It highlights the research question, an overview of the search process, key conclusions and implications for practice. The strategy also includes the dissemination of the research findings using effective knowledge translation strategies, namely interactive group sessions.

HIGHLIGHTS OF THE EVIDENCE REVIEW:

- There is insufficient high-quality evidence to suggest that universal prevention strategies are effective in preventing alcohol-exposed pregnancies.
- The reviewed studies conclude that selective prevention strategies, namely screening, is more effective than usual care, or than not using any screening tool in identifying potential alcohol use among pregnant women.
- Studies examining the effectiveness of screening tools to detect risky drinking behaviour in pregnant women purport that the most appropriate screening tools are the pregnancy specific
- T-ACE and TWEAK questionnaires.
- Studies examining the effectiveness of brief interventions claim that some brief interventions are effective in preventing prenatal drinking. However, it is unclear which components of the interventions are responsible for success, as unsuccessful interventions were comprised of the same components.
- There is a possibility that women who consume low levels of alcohol during pregnancy will reduce their consumption after relatively simple interventions such as being asked about their drinking behaviour and receiving simple advice about the risks of drinking during pregnancy.
- Brief interventions that have a contraceptive counselling component targeting non-pregnant women are effective in reducing risk drinking and increasing effective use of contraception.
- Screening and brief interventions are 1:1 strategies, are not in accordance with population health strategies, and are best administered by primary healthcare providers.

The completed report was first shared with the Peel FASD Steering Committee and associated community agency partners. An interactive group session was held, whereby the authors presented the process and findings of the rapid review report and the policy and programmatic recommendations. Following the presentation, the community agency partners discussed the implications of the findings for their work and outlined next steps.

Staff in the Region of Peel Family Health Division, received the findings of the research evidence through a "Knowledge Transfer and Exchange" half-day session. A PowerPoint presentation was given followed by group activities to discuss the findings and implications for practice in various public health programs (e.g. Healthy Babies Healthy Children home visiting program). Groups comprised of Public Health Nurses, Family Visitors, Registered Dietitians and Health Promotion Officers discussed the scope of the issue (prenatal drinking) in their respective programs and the potential impact of a strategy targeting primary healthcare providers screening and providing brief counselling on their target population. Groups were able to share highlights of their various discussions with the entire Division.

The research findings were also shared at two physician rounds at local hospitals, with a third session to follow at the end of March, 2012.

Based on the evidence, the following policy and programmatic recommendations were formed:

1. Discontinue investing in the development of broad, universal social marketing campaigns related to the effects of alcohol use in pregnancy.
2. Continue to deliver key messages on the effects of alcohol use in pregnancy through existing prenatal education programs (e.g. HBHC & prenatal classes) in accordance with the Nurturing the Next Generation strategic priority, which focuses on optimizing developmental outcomes and trajectories for children.
3. Continue to work in partnership with the Peel FASD Steering Committee, providing expertise on research evidence and best practices related to alcohol and pregnancy on various topics pertinent to the group.
4. Promote the development of an outreach strategy, targeting primary healthcare providers, to promote screening of alcohol use and brief interventions for pregnant women and women planning pregnancy. Peel Health will support this strategy by providing the expertise of our Physician Outreach Specialist.
5. Stay abreast of the literature on alcohol use and pregnancy and continue to monitor the awareness levels of residents through questions on the Rapid Risk Factor Surveillance System (RRFSS) surveys.
6. Share the findings of this rapid review with the Peel FASD Steering Committee and internal stakeholders who (that) service women in their childbearing years (e.g. Healthy Sexuality, Substance Misuse, and School Health teams) for reflection on the implication of the results in their respective programs.

1.3 Implications

All of the six recommendations were adopted by Peel Public Health without amendment and are currently being implemented. The reallocation of funds for a mass media campaign to a targeted physician outreach strategy to increase screening and brief counselling of pregnant women and women planning pregnancy allows the Peel FASD working group as well as Peel Public Health to focus their prevention efforts on tasks that will reach the intended target audience. This also promotes an evidence based intervention to be administered by the appropriate healthcare providers, increasing effectiveness and efficiency of prevention efforts.

The rapid review was completed in September 2011. A knowledge dissemination plan was created and is currently underway.

Evaluation of our KT strategy will assess the following indicators of knowledge uptake: Reach, Usefulness, Use, and Partnership.

1.4 Lessons Learned

1. As an organization that was undertaking an evidence review, Peel Public Health was essentially the knowledge creator, and it was important for to work with community partners, the knowledge users, throughout the entire research process. This allowed for smooth uptake of findings and recommendations.
2. Lack of Canadian and regional data about the magnitude of FASD and prenatal alcohol consumption rates provided fertile soil for great debate about the magnitude of the problem. Additionally, competing evidence that suggests that prenatal drinking does not pose serious harm confuses staff as well as pregnant women and women planning pregnancy. This kind of debate makes it difficult to convince some practitioners about the importance of the issue (prenatal drinking).
3. It is important to inform the knowledge users (front-line staff and FASD steering group) about the limitations and gaps in the evidence. This allows people to be knowledgeable about what is known and what has not been substantiated in the evidence, to allow for informed decision-making.
4. Physicians are a very hard to reach target group and it is difficult to change physician practice. Based on an evidence review on communicating effectively with physicians to influence practice, also conducted at Peel Public Health, the project team have learned that print material and didactic meetings have limited beneficial effect on physician practice; rather, interventions like audit & feedback, continuing education with both didactic and interactive components and educational outreach visits have been shown to have larger effects.

1.5 Resources and Tools

- Link to the Peel Public Health report: 'Effective Interventions to Prevent Alcohol-Exposed Pregnancies'
- National Collaborating Centre for Methods and Tools (2009). *Applicability and Transferability of Evidence Tool (A&T Tool).* Hamilton, ON: McMaster University. (Updated 02 December, 2013). Retrieved from http://www.nccmt.ca/registry/view/eng/24.html.
- The Canadian Health Services Research Foundation (CHSRF) reader-friendly writing-1:3:25 document: http://www.cfhi-fcass.ca/SearchResultsNews/10-06-01/d497a465-5398-4ec8-addf-d7cbf86b1e43.aspx.
- Additional literature reviews to inform practice can also be found on Peel Public Health website.
- The KT planning tool that Peel Public Health used to outline their KT activities was adapted from: 'Knowledge Translation Planning Template'. Barwick, Melanie-The Hospital for Sick Children, Toronto. Version Date: July 30th, 2010
- Link to You Tube synopsis of report
- Link to Alcohol and Pregnancy resources from Best Start
- Link to: Rapid Risk Factor Surveillance System
- Link to Peel Public Health's guidance on When to Use a Rapid Review Process

2. LOCAL PUBLIC HEALTH PRACTICES TO REDUCE SOCIAL INEQUITIES IN HEALTH

Penny Sutcliffe, Medical Officer of Health and Executive Director (Sudbury & District Health Unit); Sandra Laclé, Director (Sudbury & District Health Unit); Susan Snelling, Manager (Sudbury & District Health Unit)

Case Features

MIXED OTHER <500 LOCAL

2.1 Introduction and Overview of the Issue

Public health utilizes a population health approach to improve the health of the entire population and to reduce health inequities among population groups. Health inequities (a.k.a. social inequities in health) are differences in health status that are systematic, socially produced, and unfair and unjust. There are many actions that should be taken at the national and provincial levels to address inequities. Actions to be taken at the local level are less clear. For Sudbury & District Health Unit, improving population health by decreasing social inequities in health had been a strategic priority for over a decade. However, evidence was not readily available, specifically best practice evidence for local public health action needed to be identified.

With recent public health renewal initiatives in Ontario, boards of health are responsible for public health programs and services that address social inequities in health. Our Public Health team at the Sudbury & District Health Unit wanted to contribute to the knowledge base for local public health action on social inequities by identifying practices that would be relevant for front line public health practice settings. We then wanted to move forward in implementing those practices in our public health unit.

Addressing the problem would also reinforce our Board of Health strategic directions and resolutions related to inequities in health. It was also expected that in addressing this specific problem, the organization's overall capacity to use research evidence and to influence healthy public policy would be enhanced. In the longer term, addressing this problem will contribute to improved health outcomes for area citizens and highlight effective practices for public health across Ontario.

The evidence base identifying effective methods of reducing health inequities is limited, and the levers for action by local public health professionals are poorly understood. This means that there is limited guidance from the literature for integrating equity considerations into policy and programs. However, the WHO Commission on Social Determinants of Health notes that although more research is needed, this gap should not be a barrier to making judgements based on the current evidence (2008).

2.2 The Role of Evidence

As we locally continued to discuss the need for public health action to reduce social inequities in health, many other health units (such as OPHA conference participants) commented that they were on side, but wanted to know what, specifically, they should be doing. We did not have a clear answer and so we turned to the evidence to see what grounding there was for action on this issue.

We looked for published and grey literature on social inequities in health and action at the local public health unit level, searching databases and the websites of public health, government (internationally and Canadian) and non-government organizations. We reviewed documents and assessed them on a fit-for-purpose basis, determining whether the article convincingly addressed our question about reducing social inequities in health. The most relevant documents were read in depth, social inequity-reducing practice themes were extracted independently by the readers, and a consensus process was used to establish a list of ten promising practices. Our review yielded *promising* public health practices, rather than practices we could describe as 'proven' or 'best' practices.

TEN PROMISING PRACTICES

1. **Targeting with Universalism**
   There is a need to improve disproportionately the health of more disadvantaged groups through targeting, while at the same time improving the health of the entire population. To make strides in reducing health inequities, public health practice must strive to balance selective or targeted approaches with universal strategies.

2. **Social Marketing**
   Target audience segmentation and tailored interventions, including health communications, are key steps within the social marketing process.

3. **Early Childhood Development**
   It is widely recognized that early child experiences establish the foundational building blocks for development across the life stages. Furthermore, with the greatest gains experienced by the most deprived children, investments in early child development have been referred to as powerful equalizers.

4. **Purposeful Reporting**
   Through reporting purposefully on health inequities in a way that presents, rather than masks, the effect of social inequities in health, evidence of progress or lack thereof can be brought to the fore and can guide future interventions.

5. **Equity-Focused Health Impact Assessment**
   Health Impact Assessment (HIA) is a structured method to assess the potential health impacts of proposed policies and practices. With the goal of reducing social inequities in health, knowledge about the winners and losers of policies can assist decision-makers to minimize negative health outcomes, compensate those affected with other benefits, and/or ensure that those affected are not already disadvantaged.

6. **Inter-sectoral Action**
   Inter-sectoral action is critical, as many of the solutions to addressing social inequities in health lie outside of the health sector. Building strong and durable relationships between public health and other sectors (e.g. education, municipal, transportation, environment, finance, etc.) will be necessary for effective action.

7. **Community Engagement**
   Community engagement is a key cross-cutting strategy in reducing social inequities in health. It is particularly important to ensure the participation of members of vulnerable populations in problem identification, intervention development and evaluation.

8. **Health Equity Target Setting**
   Target setting appears to hold some promise as part of a strategy for reducing health inequities, and may have a role at the local public health level.

9. **Contribution to Evidence Base**
   It is important that the burgeoning knowledge base on addressing social inequities through local public health action be strengthened by intentional dissemination of knowledge.

10. **Competencies/Organizational Standards**
    The skills base required to work effectively on social inequities in health includes community planning and partnership and coalition building, among other skills — not a common knowledge or experience base for most public health staff. Public health organizations will have to make social inequities work a priority, and commit to working inter-sectorally and with community engagement as a foundation, something that may amount to a paradigm shift for public health.

Having identified ten promising practices, we sought a method to move this knowledge about social inequities into action. We consulted the public health unit management team to identify their specific needs regarding the use of evidence. Managers described a lack of time and skills to critically appraise and apply research evidence.

Given the knowledge transfer strategies we examined and the identified needs in our setting, we chose knowledge brokering as a practice that would allow us to move the ten promising practices into action at the Sudbury & District Health Unit.

Knowledge brokering is interactive, face-to-face engagement that provides for two-way dialogue about research and evidence.

> " [A knowledge broker] provides a link between research producers and end users by developing a mutual understanding of goals and cultures, collaborates with end users to identify issues and problems for which solutions are required, and facilitates the identification, access, assessment, interpretation, and translation of research evidence into local policy and practice. "
>
> DOBBINS M, ROBESON P, CILISKA D, ET AL. (2009)

The knowledge brokering objective was to build management skills and competencies to integrate evidence-informed practice to reduce social inequities in health. Two-hour knowledge brokering meetings were held individually with selected program managers and associated planners. Participants managed different program areas, and were seen as *'early adopters'* of equity concepts. Background materials, distributed two weeks prior to the meetings, guided the participants through the ten promising practices, and selected readings were provided. Participants were asked to review the resources and reflect on their potential application to specific programs and activities. During the meetings, participants engaged in a facilitated discussion with the knowledge broker about how to incorporate the promising practices into the planning for their specific programs.

2.3 Implications

The Sudbury & District Health Unit has a values-based commitment to reduce social inequities in health. However, we have lacked information on evidence-informed strategies for our local public health agency. Our identification of the ten promising practices is a significant and practical milestone.

The project also demonstrated that the provision of information about social inequities in health can be done effectively through knowledge brokering. The process of making changes within programs is clearly more complex than what can be accomplished in a two-hour knowledge brokering meeting, and it would be unlikely to find that the process in and of itself created significant change. However, participants expressed intentions to follow up on possible directions with their teams, and it is through this process, which began through knowledge brokering, that changes to program plans may occur. Managers supported broader organizational engagement in the knowledge brokering sessions, and we have since offered knowledge brokering to all of the organization's directors and managers. Through this process, a sense of "ownership" of work on social inequities in health is spreading to an expanding group.

Detailed field notes were taken of the knowledge brokering sessions and of the subsequent follow-up consultations and a survey of participants also solicited their feedback on aspects of the knowledge brokering. Overall, support for the knowledge brokering process was very high with participants' willing to recommend the process to others. There was support for the individualized, small group approach to knowledge brokering so that questions and challenges could be fully explored in a relaxed, open environment.

The knowledge brokering strategy demonstrated significant promise in building management knowledge, skills and competencies. The knowledge brokering meetings were effective in providing a forum for in-depth discussion of social inequities in health in the context of a particular program area. Implications of the practices for program plans were identified through the discussions, and in some cases, specific actions for implementation were identified.

To support our progress internally and also to bring external community partners on side, we have invested in the development of a Health Equity Office (HEO), including an identified manager and staff, and have developed a ten-year action guide based on the ten promising practices. The implementation of the guide will be the overall responsibility of the HEO. We have also developed a short bilingual video aimed at engaging partners outside of the traditional health sector.

Although the establishment of the Health Equity Office and the implementation of the *Let's Start a Conversation* campaign are relatively recent developments arising out of our ten year plan, there is an evaluation plan in place for these initiatives, looking at both how the processes have been implemented and also looking at long-term achievement of our goals related to building strong internal capacity and promoting external community ownership of equity issues.

One of the promising practices we identified was to implement both targeted and universal public health programs. Others were to invest in healthy child development, to engage in intersectoral action, to undertake purposeful reporting and to ensure community engagement. As an example of these practices in action in our health promotion work, the project team worked with the *City of Greater Sudbury Best Start Network* to build an evidence-based approach to providing child and family supports in a targeted way, reaching families who are most in need of the services.

The *City of Greater Sudbury Best Start Network* looked at data on conditions that impact healthy child development, such as family income, lone parenting, language, education, and other factors. Mapping of these data allowed us to identify priority neighbourhoods for health promotion action. With these results, the Network members determined the location of Best Start Hubs to have the greatest impact on populations most at need of the supports.

The implications of this process reached beyond the establishment of the Best Start Hub service locations. These priority neighborhoods were then compared at the SDHU to Healthy Babies Healthy Children and Dental Indices survey results. There was a high level of consistency between areas where social, economic and educational needs had been identified with poorer health outcomes. This impacted the location for other Public Health Programming, and public health nurse assignments were realigned accordingly.

The Best Start Network is in the very early stages of evaluation of the Best Start Initiative; we believe that in the longer term, community engagement and participation of priority populations in Best Start Hubs will lead to increased appropriate connections with community services, increased social inclusion, improved parenting skills, and improved educational success. The social capital that was built and has increased over the course of the process has, *we believe*, contributed to the development of significant partnerships such as has been experienced in the development of our Positive Parenting Program (Triple P) initiative. Community partners have been quick to engage and respond to a plan to move all community parenting initiatives to the Triple P "system" model. Being able to build on the engagement and partnerships for new and emerging opportunities will ensure that best practices are adopted quickly in the community resulting in improved health and social outcomes. In the first Best Start evaluation, parents have indicated in significant numbers that their parenting capacity has improved (67%). Further, 72% report increased knowledge about child development and 78% indicate that the Hub is helping to nurture their child's development and readiness for school.

2.4 Lessons Learned

1. Our work was completed in the context of relatively strong organizational and community familiarity with, and support for, reducing social inequities in health. The right preconditions are likely key to any generalizability of this knowledge brokering process. Internally, program sustainability measures must be put in place. It will be important to maintain existing committee structures that support social inequities in health work, create management expectations and planning tools, and continue to explicitly allocate human and financial resources to the social inequities in health portfolio. Externally, we must continue to ensure that our community partners are supportive and seeking out their own opportunities to address social inequities in health.
2. A challenge we encountered was the complexity of the problem we were tackling and the vastness of the possible relevant evidence base. Rather than finding definitive evidence for effective action, we were faced with evidence that was often suggestive, speculative, and informed by experience rather than by randomized controlled trials or other strong evaluation designs. Existing systematic reviews related to social determinants of health show unclear relationships between interventions and health inequalities, and more intervention research is needed. Nonetheless, the ten promising practices form a preliminary base for action to reduce social inequities in health, and through implementation of these practices, we can continue to build the knowledge base about effective practice.

3. Although our health unit has been engaged in professional development and strategic and operational planning related to social inequities in health for over a decade, we found that practical, evidence-informed practices, shared through a knowledge brokering process, encouraged integration of the practices into the program planning process. It was also valuable to create an organizational expectation that these practices be implemented (as relevant), rather than being seen as optional add-ons.
4. In order to fully address social inequities in health, there are many policy initiatives that would need to be implemented at levels beyond local public health. However, public health units can and should play a role through programs and services. Although many in public health are committed to the need to reduce social inequities in health, they have not had tangible evidence-informed strategies. Identification of the ten promising practices meets an expressed need in the field for evidence-informed strategies to address inequities at the local public health level.

2.5 Resources and Tools

- Link to the 10 promising practices "Fact Sheets" from Sudbury & District Public Health
- Link to learn more about the social determinants of health and social inequities in health.
- Link to find out more about the actions taken by the Sudbury Health Unit to reduce social inequities in health.
- Link to Explore some of the tools and resources used by the Health Unit and other agencies in their efforts to reduce social inequities in health.
- Link to Video: *Let's Start a Conversation About Health … and Not Talk About Health Care at All*
- Link to Vidéo: Engageons une conversation sur la santé… sans jamais parler de soins de santé
- Link to Sudbury & District Website, Health Equity
- Link to all three reports from the CHSRF EXTRA program are found at the following link (#1, #2 and final reports)
- Link to 10 Promising Practices Technical Briefing
- Link to 10 year Sequential Action Guide

3. RURAL HEALTHeSTEPS: EXERCISE RX

Robert Petrella, Beryl and Richard Ivey Research Chair in Aging, (Lawson Health Research Institute & University of Western Ontario; Sheila Cook, Knowledge Broker (InFacilitation); Katie Mairs, Research Assistant, (St. Joseph's Health Care London)

Case Features

RURAL OTHER <100 PROV

3.1 Introduction and Overview of the Issue

Available scientific evidence clearly indicates that chronic disease continues to be a growing epidemic in Canada. Cardiovascular disease, caused by a sedentary lifestyle, drives chronic disease morbidity and mortality in Canada. For example, for diabetics, cardiovascular disease complications (CVCs) result in >70% of deaths, leading to escalating health costs. It has been suggested that most CVCs could be prevented by a coordinated effort to adopt and sustain an active lifestyle (World Health Organization, 2006).

Evidence clearly demonstrates that no other intervention (e.g. medication, counseling) is as effective as exercise for physical and mental health. Yet, new data from the Canadian Health Measures Survey (CHMS) indicate that only 15% of Canadian adults attain the recommended 150 minutes of moderate to intense exercise per week. Literature suggests that inactive and/or overweight individuals need to exercise at an intensity that gives them the benefits of exercise while ensuring that they are exercising safely. This notion informed the development of the Step Test™ as an exercise prescription instrument (Petrella et al., 2001).

Importantly, there are alarming discrepancies in the burden of chronic disease based on geography, whereby rural residence increases the risk of developing chronic disease, including type 2 diabetes, and worsens the outcome. As an example, the Huron-Perth-Grey-Bruce counties of mid-western Ontario have the highest cardiac death rates within Ontario and Canada while the prevalence of diabetes in the Grey-Bruce area is double (8.0%) that of Middlesex-London (4.1%), a neighbouring urban area (Canadian Institute for Health Information, 2006). Similar patterns surrounding the rural burden of chronic disease also exist in other regions of Canada (Statistics Canada, 2005).

To address this issue, the international *Innovation to reduce cardiovascular complications of diabetes at the intersection of discovery, prevention and knowledge exchange: ARTEMIS* study was developed with the overall objective to determine the scientific basis for the effectiveness of lifestyle modification strategies, and the feasibility, utility and fidelity of technology-based self-monitoring and intervention tools/devices in urban and rural populations.

Following pilot testing of multiple health technologies to support the health benefits of our proprietary evidence-based exercise program rural adults with metabolic syndrome (Stuckey et al., 2011a; Stuckey et al., 2011b) we conducted a randomized clinical trial of a health technology-exercise intervention (utilizing the Step Test™ — a proprietary exercise test for primary care; Petrella et al., 2003) in a sample 300 individuals with metabolic syndrome in rural or urban settings over a 12-month period to investigate how this novel technology-supported exercise intervention could change and sustain risk factors for diabetes. We are currently in the process of fully analyzing the results.

Over the course of the study, the participants walked 141,853,491 steps in 365 days, averaging 6371 steps per day for each participant; their overall level of fitness (V02 max) improved, and they reduced their blood pressure, blood sugar levels, and total cholesterol. As a whole, the group lost close to 500 pounds. At study completion, while interviewing the research participants to learn about their experiences and ideas about future research projects, they told us, "please don't abandon us once the study is over", "I've made such good progress, I've lost weight and I feel so much better, I need support to continue", "this is meat, potatoes and gravy country. We know we need to be healthier but we need lots of help." As a result, we were committed to finding a way to help the residents of Huron County live healthier lives on a long-term basis.

We developed the "HealtheSteps program" in response. It builds on an open access web-portal format (HealtheSteps.ca) where an online trained care coach provides patients and providers with real-time access and support for prescriptive exercise. The HealtheSteps program is innovative in nature as it brings research from the lab into community settings such as family health teams (FHT) and community health centres in a practical way. The program goes beyond traditional health education and self-care principles. It provides each person with an individualized lifestyle prescription (based on the results of their Step Test™). It is also sustainable over the long-term so that participants are engaged for much longer than the traditional 6-12 week program. This structure supports long-term lifestyle change in the interwoven areas of exercise, diet and mental health strategies. Discussions with participants of our research studies emphasized that prior to receiving an exercise prescription; they did not know how much exercise they should be doing, how often, and at what intensity. They expressed concern about their health issues and acknowledged that they wanted to make a positive change in their life. The exercise prescription and regular monitoring gave them the confidence they needed to improve their fitness level and overall health. Throughout their participation in the research studies, the participants indicated on several occasions that they felt motivated to improve their Step Test™ result each time they returned for a session. To date, HealtheSteps has been piloted successfully in the Huron Community Family Health Team in Seaforth, Ontario. The program is currently in the planning and implementation stages in several other settings.

3.2 The Role of Evidence

Multiple forms of evidence were used to inform the development of the intervention, including scientific evidence, practice-based evidence and lived experience. These multiple form of evidence included systematic reviews, searching both published and grey literature, as well as qualitative information captured through community consultations unpublished.

For the ARTEMIS study, specific data measurements were collected and monitored for each participant at baseline and at 3 month intervals in order to monitor changes in the measurements over time.

Similar data measurements are captured for the HealtheSteps program at the initial session and at three month intervals thereafter in order to monitor changes in the measurements.

To gather feedback on the experience of research participants in the ARTEMIS study and to ask for their ideas about future research, we conducted informal focus groups in Seaforth and London. The qualitative data captured during these focus groups were themed to undercover core priority areas for future research and program development. In addition, we also established an online forum so that individuals who could not attend a focus group could share their perspectives. These forums were monitored by the research team and included in the analysis of the focus group data. We conducted informal focus groups with community representatives. Online surveys were sent to students enrolled in medical school and allied health programs to capture their perspectives on using technology to support their patient's healthy living goals, as future health care providers.

We collected information on practice experience through an ARTEMIS innovation workshop and community consultations. The community consultations were used to inform the workshop design, as well as to capture community partner experience with the program post-workshop. The purpose of the workshop (held July 21, 2010) was to generate ideas about:

- How to support healthy living in Huron County after people are finished participating in the Artemis research project; and,
- Future research projects that use technology to create healthier rural communities.

During the workshop, the research team shared the results of the community consultations and explored collaborative ways to support the research participants as well as the population as a whole. The information collected during the workshop was analyzed for key themes. These themes are presented in an Artemis Innovation Workshop Report.

All of the above consultations were used to inform the community-based, sustainable HealtheSteps program. As we seek new collaborators, we continue to consult with community partners, organizational leaders and staff who are implementing the program. Using a continuous quality improvement model, we make modifications to tools and processes, and share learnings between the different collaborators. In this way, we are using just-in-time data and experiences to improve the program and to make it feasible and scalable.

In addition to this, consultation with our community partners resulted in the identification of several other potential venues where the HealtheSteps program could be implemented (with minor modifications to the protocol where necessary). Such venues include Walk-for-Wellness Programs and YMCA's throughout Huron County. Our hope is to pilot a "family-based" HealtheSteps program within the Goderich YMCA within the near future and we are examining the possibility of implementing the program within the business sector, as the Goderich municipality has expressed interest in offering the program to its employees.

Knowledge translation and exchange activities include:

- Presentations and posters at academic/scientific conferences and a FHT Mental Health Conference.
- Press releases (including news, radio, internet) and research participant stories.
- An interactive web portal (HealtheSteps.ca).
- Presentations to policy makers (e.g. Local Health Integration Networks, policy analysts, Deputy Ministers and Ministries of Health and Tourism, Culture and Sport).
- Café Scientifique (CIHR-funded program of public engagement with the research community).
- Research results provided directly to research participants.
- HealtheSteps Program sessions.

3.3 Implications

Through our research program, we implemented an evidence-based exercise prescription program that was feasibly embedded within the local rural community context. Further implementation and sustainability of the program was/has been informed through direct input from our research partners including patients, clinicians and community leads. As a result, our HealtheSteps program is not only locally sensitive, but driven by the communities they serve. Our research participants and community partners have also asked questions, and challenged the research team to address important health issues such as self-monitoring, use of technologies, and linking with their caregivers.

Specific health outcomes at the community level have included improved weight, blood pressure, and activity levels of the research participants. We have identified community resources to continue the program and to create new opportunities for community-driven activity programs. Industries have also been engaged to support the health of the citizens who work in their businesses. Creative use of community space (e.g., arenas, grocery stores, and community centers such as the YMCA) has led to novel means by which to promote and deliver the HealtheSteps program. As a result of the program, individuals are using pedometers when engaging in their everyday activities such as walking the dog, cutting the grass, or walking the golf course.

We have identified key local champions and involved the local Family Health Team administration and physician/staff leadership to provide local, sustained organizational change. Outcomes here include new activity program leadership, community-engagement activities/ events, and partnering with public health and community organizations.

The development and local success of the HealtheSteps Program had recently led to the formation of a new "Rural HealtheSteps Network" that includes over 60 scientists, industry, and community partners with an interest in contributing to the evidence related to lifestyle prescription in order prevent and manage chronic disease. Through this network, we aim to increase the reach of our research.

We have developed a comprehensive evaluation framework that will help us to assess impact of our knowledge translation and exchange efforts as well as the impact of the HealtheSteps program on the health of county residents. Pilot data is currently being compiled, with pilot data collection continuing until October 2012.

3.4 Lessons Learned

1. It takes time for research teams to develop trust relationships with community partners and to design and implement programs that align with the goals, processes and resources of the partners and are also evidence-based.
2. A Knowledge Broker with experience in process improvement, program implementation, communications, facilitation, and coaching plays an important role in connecting researchers, partners and resources for evidence-informed decision-making.
3. Spending time understanding needs, cultures, and environments is important to ensure the program is feasible and developed to the local context.
4. "A build it, try it, adjust it" approach will help you gain credibility and gain better results.

3.5 Resources and Tools

- Resources for HealtheSteps coaches and program participants are available at: website
- Link to Participaction
- Link to Canadian Society for Exercise Physiology
- Link to Dietitians of Canada
- Link to Canadian Diabetes Association
- Link to Heart and Stroke Foundation of Canada
- Petrella, R.J. & Lattanzio, C. N. (2002). Does counselling help patients get active? Systematic review of the literature. Canadian Family Physicians, 48, 72–80

4. CANCER SCREENING AWARENESS IN PEI

Lori Barker, Executive Director, (Canadian Cancer Society, PEI Division)

Case Features

MIXED NGO <100 PROV

4.1 Introduction and Overview of the Issue

Given the increasing cancer incidence in PEI (CCS, 2006) and lack of participation in screening programs, this project aimed to increase awareness of cancer screening programs among the target population through community engagement, health professional engagement, and a public awareness campaign. The CCS PEI project aimed to address the limited screening information available to the target population, in order to increase awareness and participation in these screening programs.

4.2 The Role of Evidence

Evidence was required for the development of community engagement, health professional engagement and a public awareness campaign. The development of an integrated screening initiative required research based on prevention and population-based screening information. Gathering evidence through research was necessary for the project team to determine what type of screening and prevention messages work effectively with the target group, and how to effectively reach it. The public education strategy (built on research findings) was expected to increase screening awareness, knowledge and participation.

The project was informed by national health surveys on self-reported screening practices and knowledge of screening tests (Canada Community Health Survey). In addition, the project evaluator conducted literature searches on behavior change in cancer screening and created a pre-campaign telephone survey which helped guide the campaign messages, as well as avenues for receiving information. A second phone survey was conducted a few weeks after the campaign launch and there was significant increase in the proportion of respondents who indicated they were "very likely" to look or ask for information on cancer screening in the next year from the baseline to the follow-up survey.

Determine level of screening awareness, knowledge and stage of readiness regarding participation in screening

A baseline telephone survey instrument was developed to determine the level of screening awareness, knowledge and stage of readiness regarding participation in screening. Through the survey process, barriers to participation in screening were identified as well as knowledge and beliefs about cancer screening. The pretest survey provided baseline data about the target population and will contribute to the development of the awareness campaign. The draft survey instrument was based in large part on previous surveys used by Statistics Canada (Canadian Community Health Survey) and the Canadian Partnership Against Cancer. Additional items have been added by the committee to meet the needs of the project evaluation.

Baseline results were shared with the Advisory Committee for the project and with officials from the Department of Health and Wellness in order to help shape the awareness campaign. The findings accumulated during the background research process informed the Advisory Committee of the core issues and topics to be addressed within the campaign, as well as the most effective manner to reach the target group of adults from 40 to 60 years of age. More specifically, the research findings allowed for the formulation of print, radio and television advertisement content and website content (www.getscreenedpei.ca).

Understand the target population

- Identify who the campaign is trying to reach.
- What messages resonate with the target population.
- What medium and approach will best deliver the message to the population.

This was done through market research, focus groups, secondary research into initiatives in other jurisdictions, scan of existing information about screening promotion best practices and identifying any groups at high risk or low participation.

Develop the strategy and test the draft screening awareness campaign materials

Prior research indicated that discussion with a doctor is the strongest driver of screening. As a result, the project team incorporated messaging from a doctor at the end of each commercial to reinforce the message that screening is an important part of personal health care. The campaign concept was developed based on the expertise of the committee and media consultants in light of available research on the target population (health care utilization, beliefs, knowledge and attitudes, screening, personal history of cancer and sources of information) and best practices on cancer screening education.

Research also showed that a significant number of Islanders (62%) do not realize they should be checked before signs or symptoms present themselves; messages focused on dispelling this myth. The initial results of the survey conducted by the project evaluator found that 'approximately one quarter of respondents did not agree that cancer screening tests can detect cancer in the absence of symptoms or that it is necessary to get screened when you do not have symptoms'. This research reinforced the need for this screening campaign. The key insight that cancer can be found before there are signs and symptoms was used as a basis for the messages of the campaign (use of "Speck") as an analogy to cancer which can be present but unseen.

The progression of the campaign phases were to start with understanding why screening is important then move people to making screening routine and ensuring that people know that physicians encourage regular screening. A screening advisory committee reviewed all draft materials and provided input during the process. The integrated campaign included a TV ad, a similar radio ad, newspaper ads (English and French), the http://www.getscreenedpei.ca website, a card promoting the website, and a brochure that was added to physician kits. The information gathered at the outset of the project will also be used to guide future campaigns and screening initiatives.

The media consultant tested the draft screening awareness campaign materials via a focus group of the intended target audience. The focus groups approached the 40 to 60-year-old target population to examine key messages and the response of this population to awareness materials. The intent of the media campaign was to move forward with creating a cancer screening culture for PEI, by making screening part of regular lifestyle and routine. The purpose of the focus group was to obtain the focus group participant's reaction to, and feedback on, the draft media materials such as ads, brochures, etc.

4.3 Implications

An evaluation group was contracted to develop pre-and-post survey tools, to conduct the Baseline and Follow-up surveys, analyze the data, and present the results in a Technical Report and a Final Evaluation Report. The Technical Report was to provide information on methods used in the evaluation of the Cancer Screening Public Awareness Campaign (survey tools, evaluation matrix and indicators). The Evaluation Report was used to document:

1. The baseline level of cancer screening awareness and attitudes in PEI among adults age 40 to 60;
2. The baseline demographic profile of self-reported screening rates in PEI among adults age 40 to 60;
3. The early outcomes of the cancer screening public awareness campaign in terms of recognition of campaign media and messages and screening intentions; and
4. The evaluation methodology used to collect and analyze the above information.

Evaluation was integrated throughout the project in order to best assess the project's effectiveness in increasing screening awareness. Similar to the pre-campaign surveys, screening awareness and attitudes were evaluated after the campaign's implementation among two independent population samples. The post-test survey provided comparative data to assess the campaign's effectiveness to increase awareness, knowledge, and action.

The campaign reached a large proportion of the intended target audience of adults age 40 to 60 in PEI. Approximately two-thirds (68%) of respondents had seen one or more of the screening campaign ads. The evaluation of the project indicated that there was a significant increase in the proportion of respondents who indicated they were 'very likely' to look or ask for information on cancer screening in the next year from the baseline to the follow-up survey. At baseline 31% were 'very likely' and at follow-up 45% were 'very likely'. Differences in intention to look or ask for information on cancer screening were examined by demographic categories for the baseline survey. Females were significantly more likely to look for information on cancer screening the next year than males ($p<0.01$, chi-squared test). There were no differences by urban/rural location, county, age, income, or employment status.

In terms of attitudes towards screening, results showed that there was a significant increase (77% at baseline 77%, 84% at follow-up) in the proportion of respondents who agree that cancer screening tests can detect cancer before there are any symptoms from the baseline to the follow up survey.

The TV ad was the most effective means of reaching the target audience; although the radio and newspaper ads served as reminders for a small proportion of the target audience and the website received a moderate number of visits. Many respondents remembered the key messages of the campaign including the idea that you are not aware when cancer is present and that you need to get screened for cancer. Finally, the getscreenedpei.ca website has the potential to influence screening rates in the future through the automated reminders to get screened on the birthdays of those who signed up to the site.

As part of the Respondent profile, respondents were asked whether they had a family physician. Rates of screening were often higher among those having a family physician, those with a higher number of family physician visits in the past year, and those who had an annual physical in the past two years. Also, Rates of mammograms in the past two years were higher among those with a family physician ($p<0.01$, chi-squared test) and increased with the number of family physician visits in the past year.

- For mammograms: In about two-thirds (64%) of cases, the discussion was started by the family physician whereas 37% of female respondents had started the discussion.
- For pap tests: In about four-fifths (82%) of cases, the discussion was started by the family physician whereas only 19% of female respondents had started the discussion.
- For Colorectal screening: In about three-quarters (74%) of cases, the discussion was started by the family physician whereas 26% of respondents had started the discussion

Based on the above evidence that was gathered, this is why one of the conclusions was that physician engagement is important as an overall approach. After the campaign, requests for presentations and displays started to come in from various groups and workplaces such as the federal department of Veterans Affairs, Revenue Canada, the GST Centre and provincial family health centres. Materials and information was also displayed at various community events, increasing the anticipated reach of the awareness screening campaign.

A cross-country webinar/teleconference was held after the project's completion to present the campaign to staff from all divisions and national offices of the CCS. Key insights and overall project results were shared so that other divisions would consider adapting the campaign to their province. Some divisions committed to incorporating into their future priorities elements of the campaign, while others proceeded to garner funding and partnerships in order to bring the campaign to their province. Messages developed were integrated in the CCS signature Relay for Life events where more than 4,000 volunteers, participants and survivors attend across PEI.

Impact of early outcomes report

The evaluation reported on the ***early outcomes*** of the cancer screening public awareness campaign in terms of recognition of campaign media and messages and screening intentions. The project acknowledged that there was a limited time period between campaign launch and completion of the follow up survey. As such, these findings represent ***early outcomes*** of the campaign.

The longer term objectives were more challenging to measure within a short 12–18 month time frame. However, the CCS indicated the following based on the early results:

- The results would be taken into consideration for the planning of a second phase of a campaign and the CCS-PEI has committed to a comprehensive cancer screening initiative over three years.
- The information collected was in itself useful and informs all areas of the overall cancer prevention initiative of CCS-PEI and provincial screening programs
- The Advisory Committee created for the project continued to meet through 2010. Partnerships were strengthened as governmental and non-government organizations were brought together to work on a common goal. The ongoing communication and joint planning has potential for the future.

4.4 Lessons Learned

1. The need for the public awareness campaign regarding cancer screening was supported by evidence as a significant proportion of survey respondents were not adherent to current screening recommendations.
2. Building a team of people and agencies that have expertise (paid or advisory partners) to assist in the production of professional and meaningful materials is crucial. People respond to professionalism and creating a campaign without the expertise of design, production and media relations would not have yielded meaningful project outcomes.
3. The cancer screening public awareness campaign and website appeared to be an effective approach that could be fielded in other jurisdictions. The TV ad was the most effective means of reaching the target audience though the radio and newspaper ads served as reminders for a small proportion of the target audience. Future campaigns should explore the possibility of a different approach to newspaper ads such as the inclusion of additional detail on where to get screened or the inclusion of additional facts or stories supporting the importance of screening.
4. The planned element of the PEI screening initiative to engage family physicians was strongly supported by evaluation findings which indicated that rates of screening were often higher among those having a family physician, those with a higher number of family physician visits in the past year, and those who had an annual physical in the past two years.

4.5 Resources & Tools

- Link to campaign website: http://getscreenedpei.ca
- Progress in Cancer Control: Screening, Canadian Cancer Statistics 2006, Toronto
- Cancer Epidemiology and Prevention, Oxford University Press, NY
- Canadian Cancer Society's Colorectal Screening Toolkit
- Canadian Cancer Society's Breast Screening Toolkit

5. COOK IT UP! COMMUNITY-BASED COOKING PROGRAM FOR AT-RISK YOUTH

Heather Thomas, RD, PhD, Public Health Dietitian (Middlesex-London Health Unit); Linda Davies, Executive Director (London Community Resource Centre)

Case Features

MIXED NGO <100 REG

5.1 Introduction and Overview of the Issue

The Ontario Public Health Standards (OPHS, 2008) require public health units to provide opportunities for skill development in the areas of food skills and healthy eating practices for priority populations. This may include, but is not limited to, pregnant and postpartum women, individuals of low socioeconomic status, and youth. Research on food preparation practices in the home, however, is sparse, especially for any particular priority population.

Cook It Up! A Community-Based Cooking Program for At-Risk Youth is an education and skill building health promotion program for groups of at-risk youth (aged 13–18) focusing on nutrition, food safety, food preparation and cooking skills, and agriculture fieldtrips to a variety of local farms. This age group has been overlooked for effective, skills-based programming offered in the community setting. As youth are transitioning from home, group homes, or foster care to independent living, they have a need for food purchasing, preparation and cooking skills.

Disadvantaged youth with poorer social determinants of health combined with unstable home lives are at a higher risk of consuming an unhealthy diet and other challenges such as addiction and homelessness. Addressing at-risk youth by implementing a program with emphasis on nutrition may help to impact other social determinants of health (such as education, as better nutrition enhances comprehension in the classroom).

Cook It Up! is a joint project of the Middlesex-London Health Unit and the London Community Resource Centre in collaboration with local chefs, farmers, and other community partners. A Steering Committee has been formed to oversee the program's content. The research component of Cook It Up! consists of qualitatively and quantitatively assessing of participants' (youths', community partners' and parents' / guardians') experiences with Cook It Up!. This study is considered a formative evaluation for the pilot of Cook It Up!

"At-risk youth" refers to adolescents whose SES and/or living arrangement puts them at increased risk for a variety of physical and psycho-social issues including poor nutrition which, in turn, can exacerbate physical and psycho-social issues.

5.2 The Role of Evidence

There is some evidence that healthy eating, cooking skills, and health are linked. However, the erosion of cooking skills disconnects the opportunity to ensure healthy outcomes for individuals. As popular food revolutionist Jamie Oliver suggested in 2009, the ability to cook facilitates one's ability to enjoy healthy foods while ensuring food choices and behaviours are conducive to improved health.

Although youth involvement in food preparation has been deemed valuable, there is less evidence in the literature on youth involvement in food-related tasks such as food shopping and preparation, especially when the target population is at-risk youth in transition from the family home or foster care to independent living. These transitioning youth are at-risk for homelessness and often experience social, physical, and psychological issues, including substance addiction, which may, in turn, present additional barriers to healthy lifestyle behaviours. The provision of a hands-on, practical life skills program in service of building self-efficacy, knowledge, self-confidence, and self-esteem is a unique intervention for at-risk youth

Relatively few studies have focused on identifying efficacious components of cooking programs targeted at youth. The main focus of Cook It Up! was to measure changes in attitudes, knowledge, and behaviours regarding cooking. As such, the evidence demonstrates that providing cooking classes has a greater impact in terms of attitudes, cooking-related knowledge, skills, and behaviours (Levy & Auld, 2004). These authors found that the positive shift in self-efficacy was higher (and statistically significant) in the cooking classes group compared to the food demonstration group in their study (Levy & Auld, 2004).

Liquori, Koch, Contento, and Castle (1998) stressed the importance of providing a hands-on experience with food preparation in a cooking program targeting younger children. Results from this study suggest that real cooking experiences, eating food with peers, and accompanying educational components specific to nutrition and healthy eating are effective approaches (Liquori et al., 1998). Continuing with the hands-on theme, Larson and colleagues (2006b) found that young adults who were able to prepare foods more frequently also consumed less fast food and were better able to meet nutritional requirements for fat, calcium, fruit, vegetables and whole grains. These authors concluded that interventions targeting young adults should teach skills for preparing fast, nutritious meals (Larson et al., 2006b). Furthermore, the hands-on format of an intervention studied by Beets and colleagues (2007) resulted in receptiveness from participants including allowing them to engage in the cooking component thus generating greater enthusiasm and positive connection to the program and its content. This sentiment was echoed by Daugherty and Sliver (2007) who stated that a cooking program where participants can apply skills and learn to create foods from scratch fosters a fun learning opportunity. Additionally, role-modeling provided by chef-nutrition professional teams was significant in terms of using cooking to teach nutrition via practical and enjoyable methods (Dougherty and Silver, 2007).

When planning health promotion programs and services, the Generalized Model for Program Planning (GMPP) provides a useful and essential tool for health professionals (McKenzie et al., 2009). This model outlines common phases of program planning including "assessing needs, setting goals and objectives, developing an intervention, implementing the intervention, and evaluating the results" (McKenzie et al., 2009, p. 17).

In addition to the GMPP, self-efficacy, a concept grounded in Bandura's Social Cognitive Theory was a theoretical component of the Cook It Up! program. Self-efficacy is achieved when an individual has the aptitude or ability necessary to overcome barriers that preclude the desired change in behaviour (Baronowski, Perry, & Parcel, 2002). There are four main ways to facilitate increases in self-efficacy (Bandura, 1994): mastery experiences, social modeling, social persuasion, and psychological responses. In Cook It Up!, mastery experiences, social modeling, and social persuasion were incorporated within the program design (Thomas & Irwin, 2011).

Feedback on this program was continually gathered from key stakeholders directly involved (program coordinator, participating youth, guest chefs, volunteers, steering committee, field trip contributors) through direct questions (interviews) related to how they saw the program shaping up and how they would change it. The project team also sought feedback from social service providers who were involved with many of the same participating youth in their programs (e.g., Boys and Girls Club) to see if they could provide anecdotal feedback from the youth and/or could ask youth what they were gaining from the program and how it could be modified. This informal feedback was also beneficial in the shaping of the program as the intervention was being implemented.

5.3 Implications

Given the paucity of evidence related to food skills for youth, especially at-risk youth, the project team felt it was important to contribute to the limited body of knowledge by undertaking this formative evaluation study. Cook It Up! was designed to provide participants with life skills necessary for leading a responsible, independent life which will serve to enhance their self-efficacy. This study set out to assess the Cook It Up! program to determine its value from the perspective of participants, and what can be done to make it as effective as possible. The results will provide evidence-informed practice and knowledge that can be transferred to broader community agencies and groups, including public health units, local community resource centers, schools, the agricultural community, and other agencies demonstrating interest in the results.

Qualitative and quantitative evidence was sought. The project research team conducted in-depth interviews with all program partners (chefs, parents/guardians, youth, volunteers, field trip operators, steering committee members, program coordinator) and surveyed youth program participants to gain perspective on the utility of the community-based cooking program for at-risk youth. In-depth interviews were recorded and transcribed verbatim. A self-administered (or where there were literacy issues present, research team-administered) pre and post-test cooking skills assessment questionnaire was implemented with youth participants. Questionnaire results were collated. Emergent themes from the transcripts were isolated and recommendations for future community-based programming for food literacy interventions with community groups were derived from these themes.

A "how-to" manual was developed based on practical evidence and feedback from program partners during program delivery, as well as recommendations from the literature in terms of important program components. The "how-to" manual provided details about how to plan, implement, and evaluate a similar program. The manual was shared widely at provincial conferences, on collaborating agency websites, through reports to the funding agencies, and in agency board reports.

The evidence was continuously being used to provide ongoing fluid changes to the program as it was being run, by listening to feedback from the program coordinator, volunteers, chefs, steering committee members, parents/guardians, and youth.

The project research team undertook a photovoice (PV) research project (small sample of 4 participants) in which youth participants were asked to document, using photos, what they perceived as the barriers and facilitators to the application of their cooking skills after the conclusion of the Cook It Up program. Identified facilitators included "aptitude," "food literacy," "local and fresh," and "connectedness." The only identified barrier to the application of their cooking skills post involvement in Cook It Up was "easy access to unhealthy foods" (e.g., via fast food chains that were open 24 hours). While it is difficult to draw any conclusions from this study due to the small sample size, this research would suggest that food literacy programs provide youth the opportunity to participate, learn, engage, enhance, and achieve culinary competence. This study was published in the Canadian Journal of Dietetic Practice and Research (Vol. 7, No. 1; pp14–20).

Currently, an ethics submission is being completed which when approved will enable the Public Health Dietitian to implement a validated food skills questionnaire which includes self-efficacy questions. This ethics submission includes the collection of food literacy self-assessment data and will be provided to youth participating in the programs in the early stages as well as at the conclusion of the intervention. It is anticipated this tool will be utilized with youth in group home environments and Children's Aid Society participants.

The Middlesex-London Health Unit along with 7 other health units are involved in a Locally Driven Collaborative Research Project (LDCP) to explore the meaning of food skills among two priority populations in Ontario which has been determined to be at-risk youth (14–19 years of age) and pregnant women or new moms (ages 16–25) with at least one risk factor (low income, low education, geographically isolated, etc). Research will be conducted with 5 health units of this LDCP Team (2 primarily rural, 2 primarily urban and one northern health unit) and in-depth interviews will be conducted with participants in each priority population in each of the 5 health units chosen. Ellen Desjardins was hired as the lead Research Project Investigator to conduct the research. The project research team is completing a literature review and a summary of the consultations that was done with health units which led to determine project priority populations.

In terms of impact, the "how-to" manual has informed the implementation of other similar programs provincially and locally. Though not entirely the same as Cook It Up!, these programs utilize information and learnings from Cook It Up! to facilitate effective and useful interventions. Furthermore, manuscripts from the research conducted during Cook It Up! can be used to inform future programs of a similar nature and contribute to the limited evidence focusing on food literacy and cooking skills among this unique population.

The Middlesex-London Health Unit has approved ongoing food literacy programming with at-risk youth populations in group home settings, community environments, and community resource settings. The Cook It Up! program provided the foundation for ongoing programs in this area and it is recognized that food skills and food literacy have a relationship with healthy eating and obesity prevention strategies for youth in this community.

Using the results from the Cook It Up! program, programs now facilitated by the Public Health Dietitian at the Middlesex-London Health Unit are better targeted and contextualized for this unique population in an effort to truly meet the at-risk youths' needs. Furthermore, a participatory action and youth engagement approach is taken to ensure youths' voices are heard and valued in the implementation of the ongoing food literacy programs. This facilitates ongoing buy-in from this vulnerable population, enhances their attendance, and empowers the youth involved in the program.

5.4 Lessons Learned

1. Although youth involvement in food preparation has been deemed valuable, there is less evidence in the literature on youth involvement in food-related tasks such as food shopping and preparation especially when the target population is at-risk-youth. In this case, lack of intervention evidence does not mean that something cannot be done, but it provides an opportunity to add to evidence base.
2. Hands-on learning and skill repetition: – it is imperative to provide opportunities for youth to learn by doing. In accordance with the principles of self-efficacy; mastery experiences, social modeling, and social persuasion were all relevant in Cook It Up! (Baronowski, Perry, & Parcel, 2002). Though repetition is a typical way in which skills can be learned, this project provided opportunity for youth to build upon existing skills by repeating in subsequent cooking sessions and with different recipes. By the end of the program, youth were encouraged to incorporate more of their own knowledge and skill into the completion of the recipe.
3. Remember that you need to be patient with at-risk youth: when working with at-risk youth day in and day out, and the project team comes from different backgrounds, it is easy to become frustrated with their inappropriate behaviours, language, attitudes, etc. On a number of occasions, the opportunity arose for the program coordinator and key chef to problem solve and remind project leads to step back and take into consideration where these youth are coming from.

   It would be important for all staff and volunteers engaged in a similar community-based food skills program targeting at-risk youth to take some sort of poverty or high risk assessment training so they can reframe their preconceptions about these youth.

4. How do we really measure food skills? — there is a need for a validated tool to quantitatively measure food literacy gains and cooking skills acquisition among at-risk (and other) populations.
5. There is a need for a health promotion program model (Generalized Model for Program Planning), the use of Participatory Action Research approach, and a theoretically-based intervention focused on self-efficacy can shape the planning, implementation, and formative evaluation plan of Cook It Up!
6. Cook It Up! provided opportunities to explore ideas about connections to food in order to gain a varied and rich understanding about the food system. Food literacy programs provide youth the opportunity to participate, learn, engage, enhance, and achieve culinary competence.

5.5 Resources and Tools

- Link to Cook It Up! Initiative Information
- Link to article in BMC Research Notes
- Link to article in Canadian Journal of Dietetic Practice and Research
- Link to Heather Thomas dissertation "Planning, implementation, and formative evaluation of a food literacy program"

CONCLUDING REMARKS

Given that effective health promotion and chronic disease prevention interventions need to stay current with emerging and established evidence, this Casebook aimed to showcase, with Canadian examples, the value of acquiring and applying evidence through different strategies and approaches that accelerate the application of evidence to practice, program and policy decision-making. In addition, the Casebook facilitates ongoing knowledge exchange by connecting audiences to the work of others and each other.

There are several overall lessons learned from the five cases in the Casebook. Oftentimes, what is required is making sense of competing evidence on specific topics; it is critical to share the limitations and gaps in intervention evidence to allow for informed decision-making; and there is lack of definitive evidence for effective action on complex topics such as health literacy and social health inequities. And finally, lack of intervention evidence does not mean lack of action, but rather an opportunity to add to the evidence base.

Health promotion and chronic disease prevention intervention evidence field is still developing in Canada. It is evident that the use of intervention evidence to inform and improve programs and policies is still evolving. However there are many resources of intervention evidence including the Canadian Best Practices Portal, (interventions and resources sections), Health Evidence organization and resources and opportunities for learning, e.g., NCCMT online modules. We would encourage professionals to continue to seek out intervention evidence and share their experience and leaning with their colleagues to help grow excellence in health promotion and chronic disease prevention in Canada.

GLOSSARY OF TERMS

Grey literature: Information produced at all levels of government, academia, business where publishing is not the primary activity of the producing body (ICGL Luxembourg definition, 1997 — Expanded in New York, 2004).

Health Impact Assessment: A means of assessing the health impacts of policies, plans and projects in diverse economic sectors using quantitative, qualitative and participatory techniques. (http://www.who.int/hia/en/)

Health inequities: An unnecessary, avoidable, unfair and unjust difference between the health or healthcare of one person, and that of another. (http://www.nice.org.uk/website/glossary/glossary.jsp?alpha=H)

Incidence: Traditionally the proportion of newly developed (incident) disease (numerator) in a given population (denominator), but in fact, encompasses the frequency of any new health or disease related event (including death). (Szklo, M & Nieto, F.J. (2007), Epidemiology: Beyond the Basics. Mississauga. Jones and Bartlett Publishers)

Knowledge Broker: Provides a link between producers of knowledge and end users by developing a mutual understanding of goals and cultures, collaborates with end users to identify issues and problems for which solutions are required, and facilitates the identification, access, assessment, interpretation, and translation of research evidence into local policy and practice (Dobbins M, Robeson P, Ciliska D, et al. (2009))

Knowledge Translation, Exchange and Transfer: Knowledge Translation/Transfer (KT), Knowledge Translation/Transfer and Exchange (KTE), diffusion, and mobilization, are all terms that have been used to describe the complex set of activities involved in advancing knowledge generated from research into effective changes in health policy, practice, or products. KT strategies are varied and might include presentations to non-academic stakeholders, brochures, summary reports, roundtable discussions or face–to-face meetings. (http://www.sickkids.ca/Learning/AbouttheInstitute/Programs/Knowledge-Translation/Knowledge-Translation.html)

Population health approach: An approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups. In order to reach these objectives, it looks at and acts upon the broad range of factors and conditions that influence health. (http://www.phac-aspc.gc.ca/ph-sp/approach-approche/index-eng.php)

Prevalence: The presence or frequency of an existing outcome (numerator) across a given population (denominator) either at a given point in time or over a given period of time (Szklo, M & Nieto, F.J. (2007), Epidemiology: Beyond the Basics. Mississauga. Jones and Bartlett Publishers)

Social determinants: The circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness that are in turn shaped by a wider set of forces: economics, social policies, and politics. (http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/index.html)

Social marketing: The application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of their society. (Andreasen, A. (1995). Marketing social change. San Francisco: Jossey-Bass)

Systematic review: A critical assessment and evaluation of all research studies that address a particular topic using a systematic method of locating, assembling, and evaluating a body of literature on a particular topic using a set of specific criteria. (http://www.effectivehealthcare.ahrq.gov/index.cfm/glossary-of-terms/?pageaction=showterm&termid=70)

CASEBOOK FEATURE DEFINITIONS

GEOGRAPHIC SETTING

RURAL — **Rural/Remote:** case takes place in small towns or farming communities.

URBAN — **Urban:** case takes place in cities.

MIXED — **Mixed Rural/Urban:** case takes place in both rural and urban settings.

INITIATIVE LED

GOV'T — **Government:** initiative is led by the government and could include municipal, provincial or federal government and it's departments.

NGO — **NGO:** initiative is led by a non-government organization.

HA — **Health Authority:** initiative is led by health regions or health authorities.

OTHER — **Other:** initiative is led by a group other than those listed, this also includes collaborations, as well as public health units.

ORGANIZATION SIZE

>500 — **Large:** organizations that have greater than 500 staff members.

<500 — **Medium:** organizations that have less than 500 staff members.

<100 — **Small:** organizations that have less than 100 staff members.

INITIATIVE SCALE

LOCAL — **Local Level:** initiative is available at the local community or organizational level.

REG — **Regional:** initiative is available at the health regions level or within groups of cities.

PROV — **Provincial/Territorial:** initiative is available throughout the entire province or territory.

NAT — **Pan Canadian/National Level:** initiative is available in multi-provinces or multi territories